



**THE DATASHEET OF
MJD340-13**



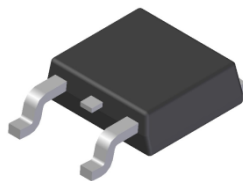
Features

- $BV_{CEO} > 300V$
- $I_C = 0.5A$ High Continuous Collector Current
- $I_{CM} = 0.75A$ Peak Pulse Current
- Ideal for Power Switching or Amplification Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

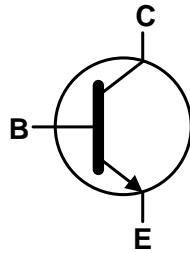
Mechanical Data

- Case: TO252 (DPAK)
- Case Material: Molded Plastic, "Green" Molding Compound
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Plated Leads, Solderable per
MIL-STD-202, Method 208 Ⓔ
- Weight: 0.34 grams (Approximate)

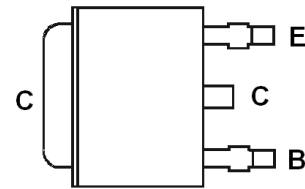
TO252 (DPAK)



Top View



Device Schematic



Pin Out Configuration
Top View

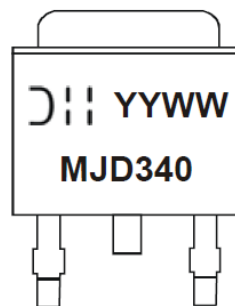
Ordering Information (Note 4)


Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity Per Reel
MJD340-13	AEC-Q101	MJD340	13	16	2,500

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen and Antimony free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

TO252 (DPAK)



MJD340 = Product Type Marking Code
 = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 18 = 2018)
 WW = Week Code (01 to 53)

Absolute Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	300	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	7	V
Continuous Collector Current	I _C	0.5	A
Peak Pulse Collector Current	I _{CM}	0.75	A

Thermal Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation @T _C = +25°C	P _D	15	W
Power Dissipation @T _A = +25°C (Note 5)		1.56	
Thermal Resistance, Junction to Case	R _{θJC}	8.33	°C/W
Thermal Resistance, Junction to Ambient Air	R _{θJA}	80	
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

ESD Ratings (Note 6)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3A
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

- Notes:
5. For a device mounted on FR-4 PCB with minimum recommended pad layout.
 6. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

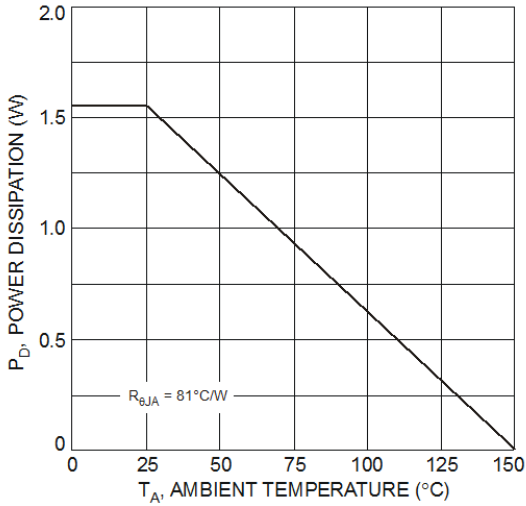


Fig. 1 Power Dissipation vs. Ambient Temperature (Note 5)

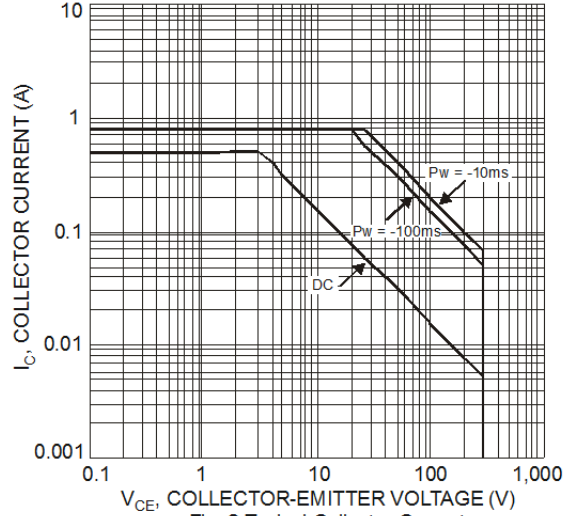


Fig. 2 Typical Collector Current vs. Collector-Emitter Voltage (Note 5)

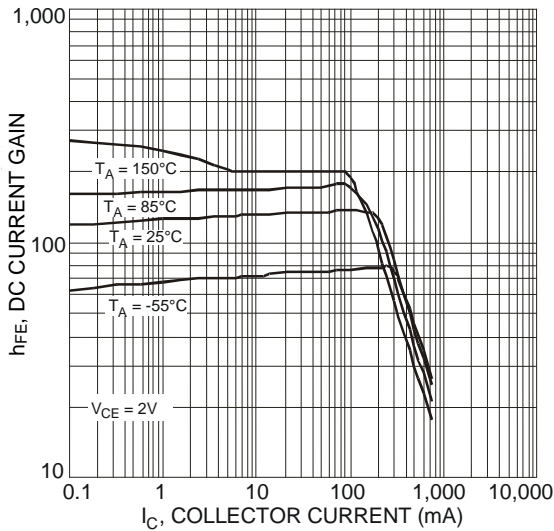


Fig. 3 Typical DC Current Gain vs. Collector Current

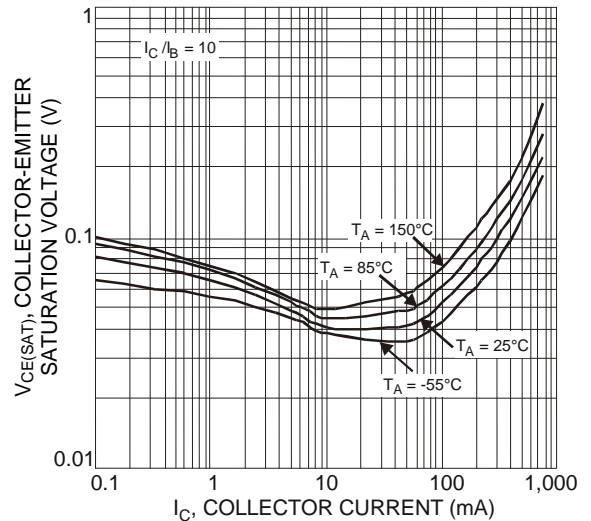


Fig. 4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

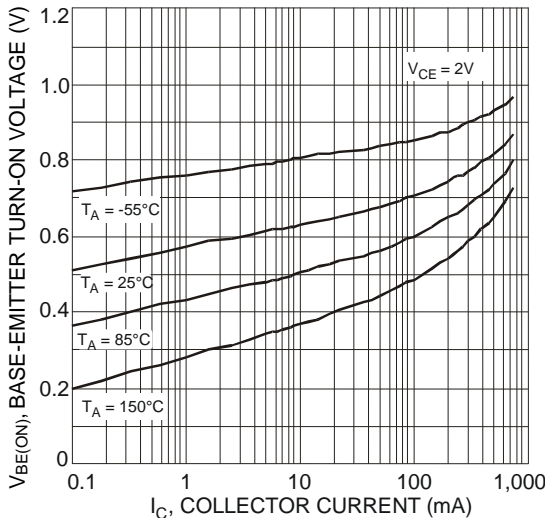


Fig. 5 Typical Base-Emitter Turn-On Voltage vs. Collector Current

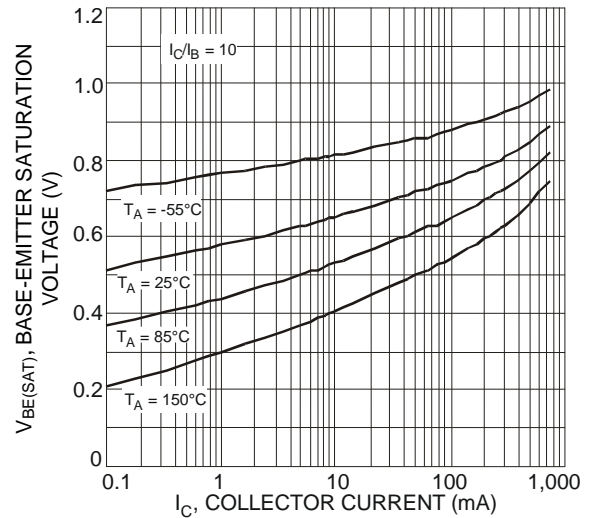


Fig. 6 Typical Base-Emitter Saturation Voltage vs. Collector Current

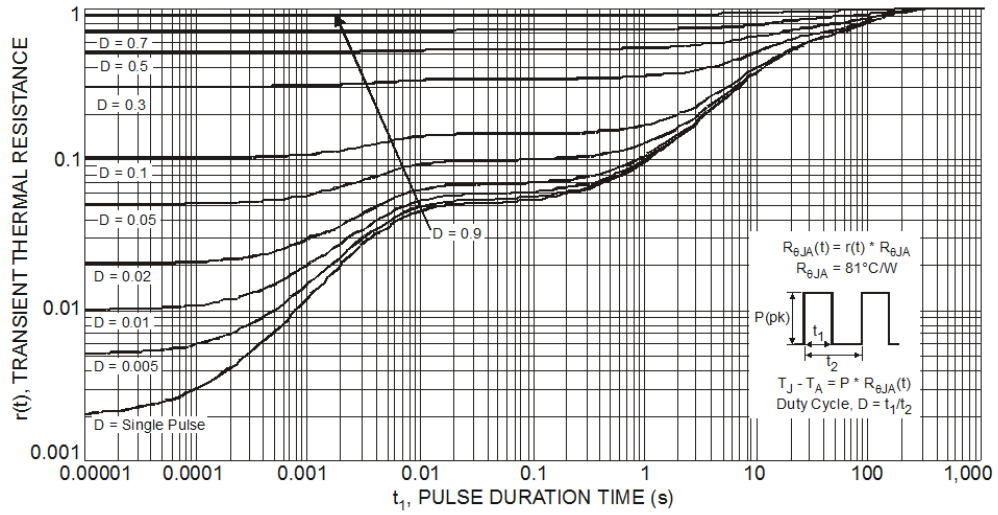


Fig. 7 Transient Thermal Response (Note 5)

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

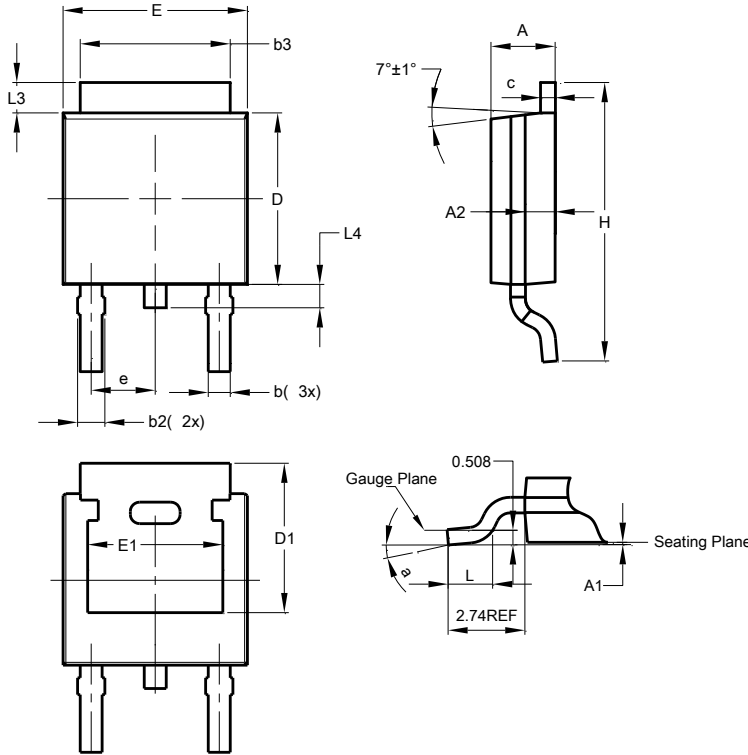
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Emitter Breakdown Voltage (Note 7)	BV _{CEO}	300	—	—	V	I _C = 1mA
Emitter-Base Breakdown Voltage	BV _{EBO}	7	—	—	V	I _C = 100μA
Collector Cut-off Current	I _{CBO}	—	—	100	nA	V _{CB} = 300V
Emitter Cut-off Current	I _{EBO}	—	—	100	nA	V _{EB} = 5.6V
Collector-Emitter Saturation Voltage (Note 7)	V _{CE(SAT)}	—	—	0.5	V	I _C = 100mA, I _B = 10mA
Base-Emitter Saturation Voltage (Note 7)	V _{BE(SAT)}	—	—	1.0	V	I _C = 100mA, I _B = 10mA
Base-Emitter Turn-On Voltage (Note 7)	V _{BE(ON)}	—	—	1.0	V	I _C = 100mA, V _{CE} = 5V
DC Current Gain (Note 7)	h _{FE}	30	—	240	—	V _{CE} = 10V, I _C = 50mA
Current Gain-Bandwidth Product	f _T	10	—	—	MHz	I _C = 50mA, V _{CE} = 10V, f = 10MHz

Notes: 7. Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%.

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO252 (DPAK)

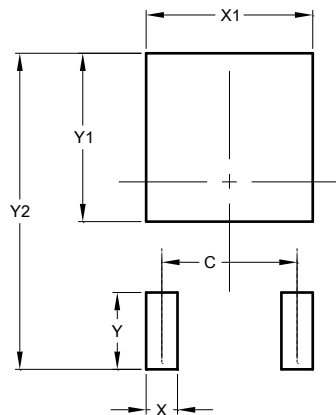


TO252 (DPAK)			
Dim	Min	Max	Typ
A	2.19	2.39	2.29
A1	0.00	0.13	0.08
A2	0.97	1.17	1.07
b	0.64	0.88	0.783
b2	0.76	1.14	0.95
b3	5.21	5.46	5.33
c	0.45	0.58	0.531
D	6.00	6.20	6.10
D1	5.21	-	-
e	-	-	2.286
E	6.45	6.70	6.58
E1	4.32	-	-
H	9.40	10.41	9.91
L	1.40	1.78	1.59
L3	0.88	1.27	1.08
L4	0.64	1.02	0.83
a	0°	10°	-
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

TO252 (DPAK)



Dimensions	Value (in mm)
C	4.572
X	1.060
X1	5.632
Y	2.600
Y1	5.700
Y2	10.700

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

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